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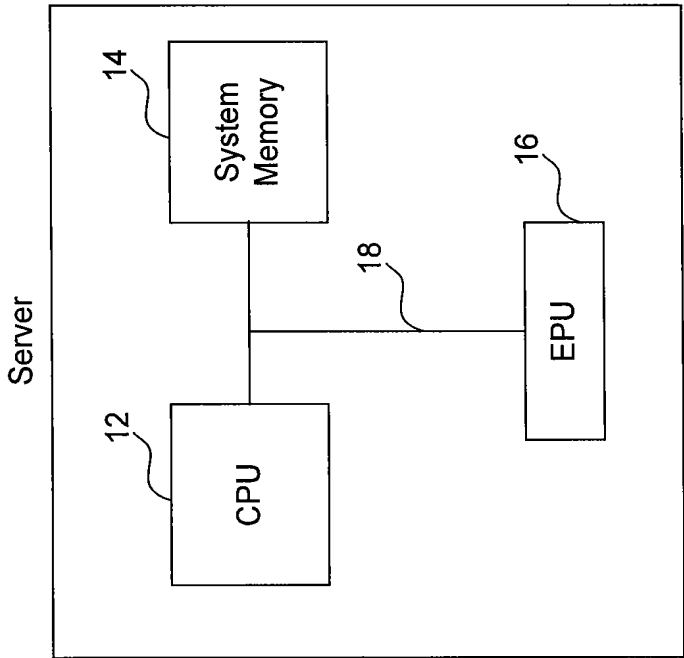


FIG. 1A

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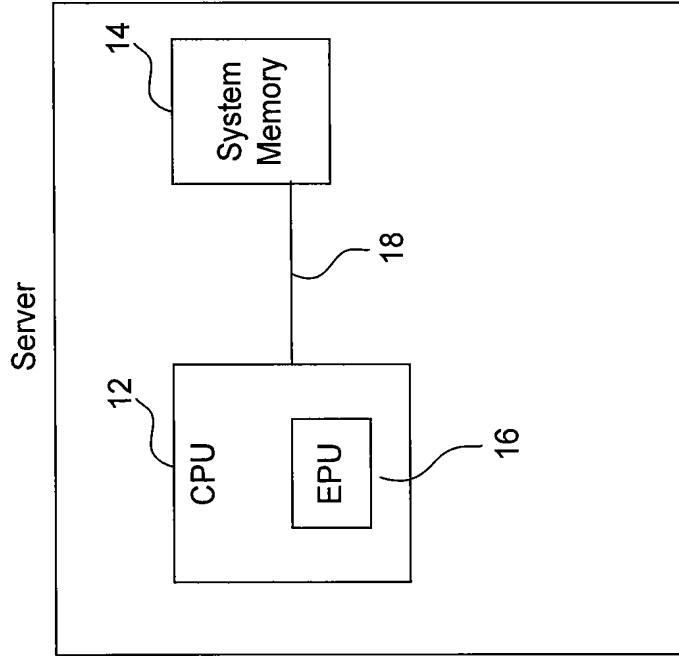
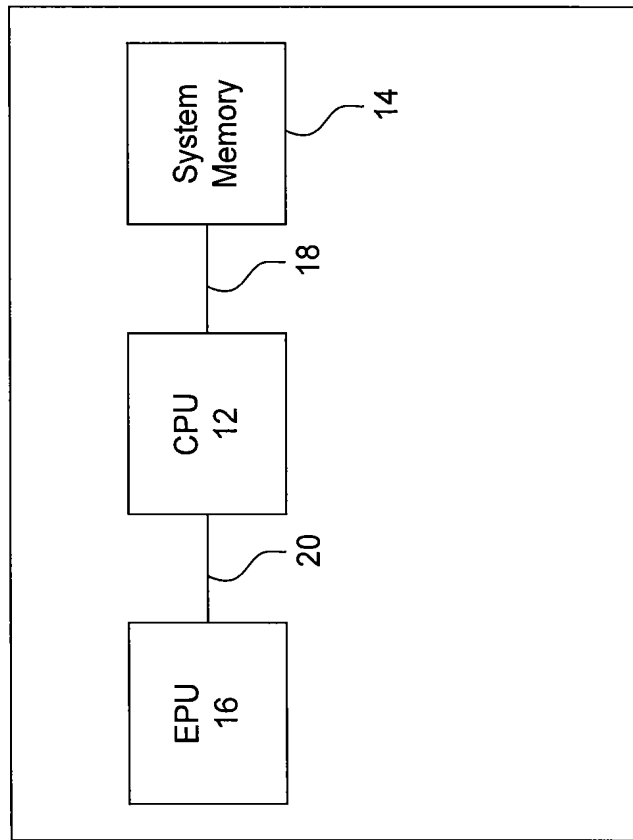


FIG. 1B



**FIG. 1C**

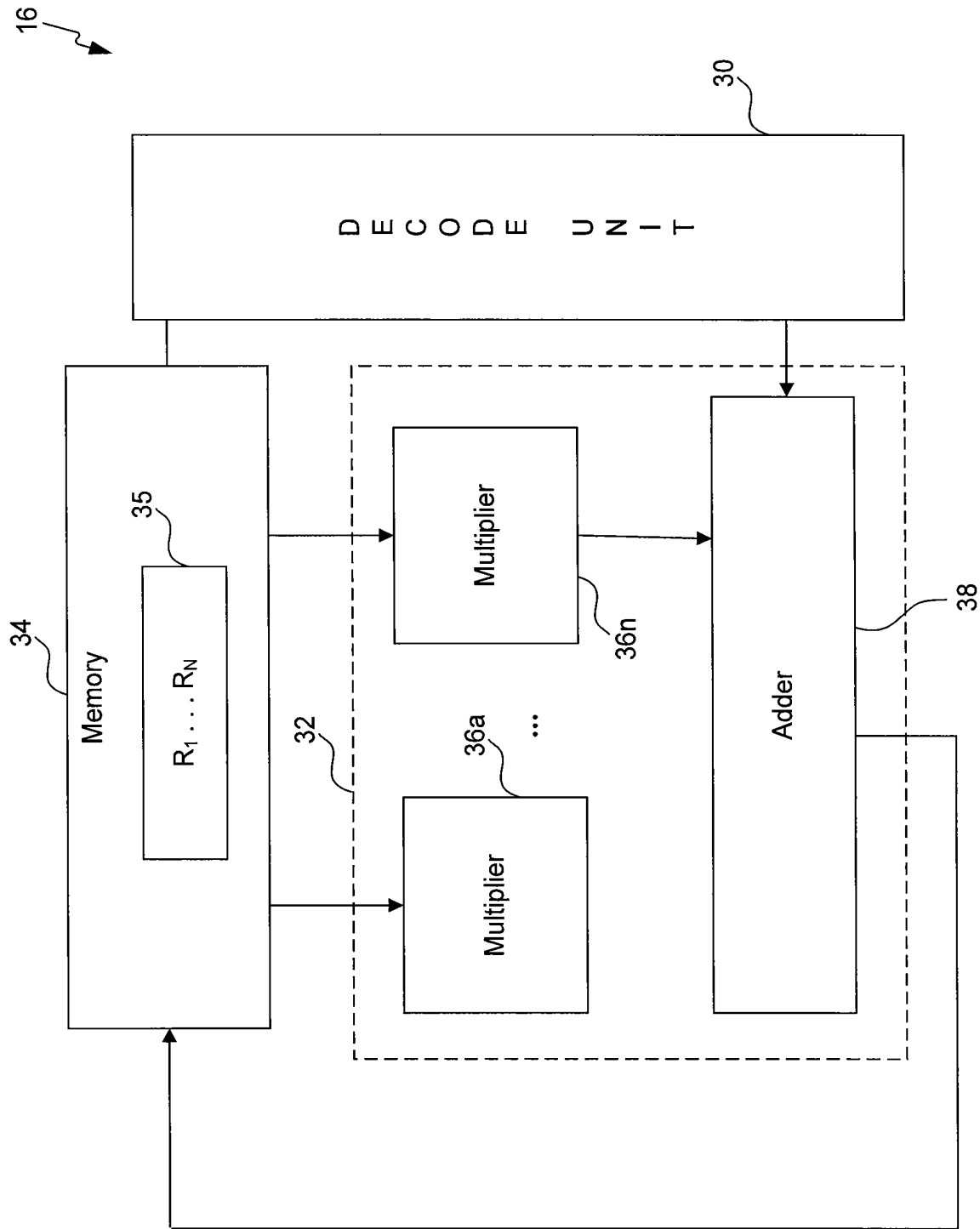


FIG. 2

<div><div><div><math>a_1 a_0</math> <math>b_1 b_0</math></div></div><div>Product Operation</div></div>					
Cycle One	<table><tr><th>Instruction</th><th>Description</th></tr><tr><td>MULT R<sub>1</sub> a<sub>1</sub> b<sub>1</sub> a<sub>0</sub> b<sub>0</sub></td><td>a<sub>1</sub> b<sub>1</sub> and a<sub>0</sub> b<sub>0</sub> are simultaneously multiplied and the result is stored in Register R1</td></tr></table>	Instruction	Description	MULT R <sub>1</sub> a <sub>1</sub> b <sub>1</sub> a <sub>0</sub> b <sub>0</sub>	a <sub>1</sub> b <sub>1</sub> and a <sub>0</sub> b <sub>0</sub> are simultaneously multiplied and the result is stored in Register R1
Instruction	Description				
MULT R <sub>1</sub> a <sub>1</sub> b <sub>1</sub> a <sub>0</sub> b <sub>0</sub>	a <sub>1</sub> b <sub>1</sub> and a <sub>0</sub> b <sub>0</sub> are simultaneously multiplied and the result is stored in Register R1				
Cycle Two	<table><tr><td>MAC R2 a<sub>1</sub> b<sub>0</sub> R1</td><td>a<sub>1</sub> b<sub>0</sub> are multiplied and the product is added with the contents of R1 and stored in R2</td></tr></table>	MAC R2 a <sub>1</sub> b <sub>0</sub> R1	a <sub>1</sub> b <sub>0</sub> are multiplied and the product is added with the contents of R1 and stored in R2		
MAC R2 a <sub>1</sub> b <sub>0</sub> R1	a <sub>1</sub> b <sub>0</sub> are multiplied and the product is added with the contents of R1 and stored in R2				
Cycle Three	<table><tr><td>MAC R3 b<sub>1</sub> a<sub>1</sub> R2</td><td>a<sub>1</sub> b<sub>1</sub> are multiplied and the product is added with the contents of R2 and stored in R3</td></tr></table>	MAC R3 b <sub>1</sub> a <sub>1</sub> R2	a <sub>1</sub> b <sub>1</sub> are multiplied and the product is added with the contents of R2 and stored in R3		
MAC R3 b <sub>1</sub> a <sub>1</sub> R2	a <sub>1</sub> b <sub>1</sub> are multiplied and the product is added with the contents of R2 and stored in R3				

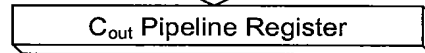
FIG. 3

Square Operation

$$\begin{array}{r} a_1 a_0 \\ a_1 a_0 \\ \hline a_1 a_1 a_0 a_0 \\ 2a_1 a_0 \end{array}$$

		<u>Description</u>	
Cycle One	<u>Instruction</u>	MULT R1 a <sub>1</sub> a <sub>1</sub> , a <sub>0</sub> a <sub>0</sub>	
		a <sub>1</sub> a <sub>1</sub> and a <sub>0</sub> a <sub>0</sub> are multiplied and stored in Register R1	
Cycle Two		a <sub>1</sub> a <sub>0</sub> , are multiplied and shifted by one and then added to the contents of R1. The result is stored in R2	
	<u>Instruction</u>	MAC 2X R2 (a <sub>1</sub> a <sub>0</sub> ), R1	

FIG. 4



**FIG. 5**